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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,240	FUCHS ET AL.	
	Examiner	Art Unit	
	EMMANUEL MAGLO	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-27,33-37,41-43,45,48,51,52,55-60,62,66-73,79-82 and 88-99* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 1-8,10-27,33-37,41-43,45,48,51,52,55-60,62,66-73,79-82 and 88-99.

DETAILED ACTION

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 37, 41, 42, 43, 48, 51, 52, 55, 56, 57, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Xu et al. (US 2006/0166653 A1), hereinafter referred to as Xu.

Regarding claim 37, Xu discloses *a method of receiving a data file provided in a multicast transmission,* (fig. 2 multicast data reception step 218), *comprising*:

tuning, by a mobile station, onto a multicast channel, (fig. 1 and [0038] the notification to inform the MS of upcoming multicast session: note fig. 3 step 308. When this notification arrives, the mobile station changes to the multicast reception mode, (tune) where it listens to the MBMS data channel in order to receive the service data (step 308) transmitted on that channel, [0060], [0061]);

receiving at least one encrypted packet which can be used in reconstructing the data file, (note MS receiving the service notification [0068], also receives a Message Authentication Code (MAC) included in a message to provide authenticity; this indicates encrypted packet. Thus, the MAC is a value derived from the message by a key-dependent one-way function (such as the widely used HMAC). Only the party possessing the key can create or verify the MAC), *on the multicast channel; and*

receiving at least one key required for decrypting the at least one packet after receiving a sufficient number of packets for reconstructing the data file, ([0069], [0070], [0071],

[0072]: a mobile station needs a key to unlock an encrypted packet.

Regarding claim 41, Xu discloses *requesting the at least one key after receiving a sufficient number of packets for reconstructing the data file and wherein receiving the at least one key is performed responsive to the requesting*, ([0069])

Regarding claim 42, Xu discloses *the requesting of the at least one key is performed responsive to a user instruction*, ([0073): The mobile station first obtains a signing key and a certificate containing the corresponding signature verification key from a KDC, showing that the request for the key is authorized by the MS because digital certificates can be used to improve the digital signature. Note, [0072], digital certificate contains a public key, signed by a trusted third party usually known as the Certificate Authority (CA). Other information such as the validity period of the certificate is normally included and also protected by the signature).

Regarding claim 43, Xu discloses *at least a portion of the data file is not encrypted and the user instruction is received after displaying the non-encrypted portion of the file to the user* ([0068]: a Message Authentication Code (MAC) can be included in a message to provide authenticity without secrecy (that is non encrypted); this forms the user instruction received by the user).

Regarding claim 48, Xu discloses *the file includes a plurality of different portions requiring different keys for decryption and wherein the keys required for at least one portion are received after displaying at least one other portion*, ([0070] However, a different key is used for signing the messages and verifying the signatures. A digital signature mechanism is typically implemented using public-key cryptography, utilizing

the widely used RSA algorithm, for example. [0075]: In order to be able to verify the signatures of the mobile stations, the RNC has to be provided with a signature verification key of one or more trusted CAs. In case more than one CA is used, their signature keys can either be configured separately to the RNC or certificate hierarchy can be utilized. For certificate hierarchy, just a single signature verification key of a top-level CA needs to be configured to the RNC: This key is then used to authenticate the certificates of lower-level CAs, each containing the signature verification key of that CA. With the hierarchical certificates, a mobile station has to include the certificate of a lower-level CA with each membership report)

Regarding claim 51, Xu discloses *tuning onto the multicast channel is performed responsive to receiving a notification on an upcoming multicast transmission and responsive to a determination that the upcoming multicast transmission matches a subscription profile of the receiver*, (the notification to inform the MS of upcoming multicast session: note fig. 3 step 308: (*responsive to the notification*), when this notification arrives, the mobile station changes to the multicast reception mode, where it listens to the MBMS data channel in order to receive the service data (step 308) transmitted on that channel, [0060])

Regarding claim 52, Xu discloses *the determination that the upcoming multicast transmission matches a subscription profile of the receiver comprises consulting a multicast subscription profile stored on the receiver*, (fig. 2 is illustrates the determination (procedure) that the upcoming multicast transmission matches a subscription profile of the receiver for the establishment for the multicast service. Thus,

when a mobile station receives this notification, it initiates a response process if it is a member of the group by checking its multicast subscription profile, [0045], [0046])

Regarding claim 55, Xu discloses *acknowledging receipt of the at least one key, in a manner which allows charging for the data file*, ([0057]): all the mobile stations will automatically send a reply. The operator may wish to do this for charging purposes, for example, [0068]: a Message Authentication Code (MAC) can be included in a message to provide authenticity The MAC is a value derived from the message by a key-dependent one-way function (such as the widely used HMAC). Only the party possessing the key can create or verify the MAC, therefore the mobile station acknowledges the possessing the key for charging purposes.

Regarding claim 56, Xu discloses *a method of multicasting a file, comprising:*

encrypting the file using one or more keys, ([0071]: a different signing key can be provided for each authorized mobile station (source authentication) or the same signing key can be shared by all authorized mobile stations (group authentication))*;*

transmitting the encrypted file to a plurality of receivers in a multicast transmission, (note a message authentication code (MAC) is included in the transmitted message, therefore the need for a key distribution center (KDC) ensures that different signing key can be provided for each authorized mobile station to decrypt the encrypted file, [0069]-[0072]));

and providing at least one of the plurality of receivers with one or more decryption keys required for decrypting the transmitted encrypted file, after the file was transmitted, (the mobile station obtains a signing key (signing keys provided to the mobiles, from the

KDC, for the purpose of decrypting the file, [0071]-[0074])

Regarding claim 57 Xu discloses *providing at least one of the receivers with at least one decryption key for the encrypted file, before transmitting the encrypted file*, (the mobile station obtains a signing key; signing keys provided to the mobiles, particularly a different key can be assigned to each authorized mobile station, [0069], before the transmission of the encrypted file)

Regarding claim 60, Xu discloses *the at least one of the receivers provided with the decryption keys before transmitting the encrypted file are selected at least partially responsive to previous behavior of the receivers*, (note fig. 3 step 308: (*responsive to the notification*), when this notification arrives, the mobile station changes to the multicast reception mode, where it listens to the MBMS data channel in order to receive the service data (step 308) transmitted on that channel, [0060]; in addition, [0061], [0071], a different signing key, (decryption keys), can be provided for each authorized mobile station before the transmission of the encrypted file)

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 2, 4-8, 10-12, 14, 19-22, 24-27, 33-3658, 59, 62, 66, 69-73, 88, 91-93, 97 and 98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (US 2006/0166653 A1), hereinafter referred to as Xu, in view of Amlekar (US 7,289,500 B1).

Regarding claim 1, Xu discloses *a method of multicasting a data file*, (see title, abstract and fig.2), *comprising*:

transmitting a notification on an upcoming multicast transmission to a plurality of receivers designated to receive the multicast transmission, (fig. 2 step 213, MBMS notification transmitted to all cells, these cells contain the mobile stations: [0043], [0060]:)*;*

tuning by at least one of the plurality of receivers to one or more multicast channels, responsive to the notification, (the notification to inform the MS of upcoming multicast session: note fig. 3 step 308: (*responsive to the notification*), when this notification arrives, the mobile station changes to the multicast reception mode, where it listens to the MBMS data channel in order to receive the service data (step 308) transmitted on that channel, [0060]),

Although Xu discloses the claimed invention, Xu does not explicitly disclose the steps of:

transmitting a data file on the one or more multicast channels, without the data server receiving acknowledgements from the receivers on whether they received the notification

determining receivers designated to receive the multicast transmission that did not receive at least a portion of the data file

attempting to deliver the data file to the determined receivers

Amlekar, in the same field of endeavor teaches

transmitting a data file, (fig. 1 step 102), *from a data server,* (col. 2 lines 28-30: step 102, the server transmits one or more files over the data channel using a multicast transmission), *on the one or more multicast channels, without the data server receiving acknowledgements from the receivers on whether they received the notification,* (col. 2 line 37: a client may choose not to acknowledge, in that case the data server will not receive acknowledgements of the received information);

determining receivers designated to receive the multicast transmission that did not receive at least a portion of the data file, (note fig. 1 steps 106-110 indicate that data set may be sent to all the clients or only to the clients who indicated that they were missing data, col. 2 lines 51-54) *; and*

attempting to deliver the data file to the determined receivers, (col. 2 lines 51-56).

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar so as to inform the clients (MS) of upcoming multicast session, for multicasting makes possible to the server to send out a single packet intended to all clients who have requested the information.

Regarding claim 2, Xu discloses *transmitting the notification comprises transmitting on a multicast or broadcast channel*, [0038]

5. Claims 3, 13, 15, 16, 17, 18, 23, 67 and 96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of Amlekar and further in view of Aoki (US 6,563,822 B1).

Regarding claim 3, *transmitting the notification comprises transmitting a unicast notification to each of the receivers on the designated receivers*,

Although Xu discloses the claimed invention, (transmitting notification to MS in different cells), Xu does not explicitly disclose the steps of transmitting a unicast notification to each of the receivers.

Aoki in the same field of endeavor teaches a method for transferring documents on the internet using unicast notification delivery. The data transmission is performed one to one in the unicast. Namely, as shown in FIG. 17, a server S1 which is on a transmitting side transmits data with a proper address "192.168.100.201" of a terminal C1 as a destination address. Then the data will be transmitted to the terminal C1 which is the destination.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Aoki, so as to deliver highly personalized data, such as stock portfolio updates and personalized newspapers.

Regarding claim 4, Xu discloses *transmitting the notification comprises transmitting substantially only to designated receivers*, (by sending multicast data to members of the multicast group: the users who agree with the service provider or operator on the conditions regarding the provision of the multicast service and who indicate willingness or readiness to receive the multicast service are the designated receivers, [0040]).

Regarding claim 5, Xu discloses *transmitting the notification comprises transmitting a message open also to non-designated receivers,* ([0038]: the multicast data source can be the Broadcast Multicast-Service Centre (BM-SC) 150 as shown in fig. 1; in this case a broadcast mode and a multicast mode transmission is assured. Thus in the broadcast mode the data is transmitted to all users in one or more broadcast areas, (this includes also *non-designated receivers*).

Regarding claim 6, Xu discloses *the notification indicates the one or more channels on which the multicast transmission will be provided*, (when using MBMS, data is transmitted over a common radio channel in order to efficiently use radio/network resources, [0026]).

Regarding claim 7, Xu discloses *tuning to the multicast channel by at least one of the receivers comprises determining by each receiver that receives the notification whether to tune onto the one or more multicast channels,* ([0060], when this notification arrives, the mobile station changes to the multicast reception mode, where it listens to the

MBMS data channel in order to receive the service data (step 308) transmitted on that channel).

Regarding claim 8, Xu discloses *determining by each receiver that receives the notification whether to tune onto the one or more multicast channels comprises determining, from the notification, a group to which the upcoming multicast transmission belongs and determining whether to tune onto the one or more multicast channels according to the determined group*, (note *group* can vary depending on the nature of the service, such as the geographical coverage of the service, and on the contents of the MM and/or MBMS contexts stored in the network. In regard to service which is geographically wide, for example, the location of each subscriber can be stored in the MBMS context in connection with the joining phase, and the location can be tracked thereafter, whereby the locations of the subscribers, and also the relevant Radio Network Controllers (RNCs), are known when the service data arrives, because each Radio Network Controller is responsible for the control of the radio resources within its domain, i.e. in the set of node B elements connected to it. [0053]).

Regarding claim 10, Xu discloses *determining by each receiver that receives the notification whether to tune onto the one or more multicast channels comprises determining based on input received from a user responsive to the notification*, (in response to receiving the notification, a user input is assured when the user selects a moment for a response to the multicast service notification, and sends a presence report, step 214 fig. 2).

Regarding claim 11, *the receivers do not transmit acknowledgements of reception of the notification, at all*,

Although Xu discloses the claimed invention, Xu does not explicitly disclose that *the receivers do not transmit acknowledgements of reception of the notification, at all*,

Amlekar discloses that upon reception of the multicast data a client chooses not to acknowledge the successful reception of the file, for, col. 4 lines 62-65, the communication from the client 206 to the server 204 over the control channel 212 may also include any ACKs or NAKs required by the multicast protocol.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar so as to interpret the lack of acknowledgement as an acknowledgement by the server after a predefined amount of time has expired with no further communication from the client as successful reception of the transmitted file.

Regarding claim 12, Xu discloses *the receivers cannot transmit uplink messages to the data server, without stopping to listen to the one or more multicast channels*, (since paging may cause a plurality of mobile stations to reply simultaneously or within a short period, which in turn may cause congestion on the uplink signaling channel, a determination of a member-specific response moment for each group member present in the cell is necessary so that, uplink congestion be avoided, [0051].

Regarding claim 13, Xu discloses *attempting to deliver the data file comprises delivering the data file in a unicast transmission to each of the determined receivers*.

Aoki teaches delivering documents on the internet using unicast transmission; with reference to fig. 17, the data transmission is performed one to one in the unicast. Namely, as shown in Fig. 17, a server S1 which is on a transmitting side transmits data with a proper address "192.168.100.201" of a terminal C1 as a destination address. Then the data will be transmitted to the terminal C1 which is the destination. Correspondingly data will be transmitted to each of the determined receivers C1-C4. It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Aoki, so as to deliver highly personalized data, such as stock portfolio updates and personalized newspapers to each individual MS.

Regarding claim 14, Xu discloses *attempting to deliver the data file comprises delivering the data file in a multicast transmission to a plurality of the determined receivers*, (by sending multicast data to members of the multicast group: the users who agree with the service provider or operator on the conditions regarding the provision of the multicast service and who indicate willingness or readiness to receive the multicast service are the designated receivers, [0040]).

Regarding claim 15, Xu discloses *attempting to deliver the data file comprises providing a notification message inviting the receivers to download the transmission on a unicast connection, to the determined receivers*.

Xu discloses the claimed invention, (transmission of notification to MS in different cells); Xu does not explicitly disclose the step of *a notification message inviting the receivers to download the transmission on a unicast connection, to the determined receivers*.

Aoki teaches, transmitting a packet for inviting a connection to the network inviting a connection method, col. 4 lines 35-45, for transferring documents on the internet using unicast notification delivery, (fig. 17).

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Aoki, so as to deliver missing data, or individually requested data or highly personalized data, such as stock portfolio updates and personalized newspapers.

Regarding claim 16, *at least 80% of the designated receivers establish only a single unicast connection related to receiving the data file*.

Xu discloses the claimed invention but explicitly that *at least 80% of the designated receivers establish only a single unicast connection related to receiving the data file.*

Aoki teaches that the number of the receiving terminals cannot be specified, and that there is a possibility that a large number of resending request packets are generated (see FIG. 21), col. 2 lines 38-40.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Aoki, so that the load of the network can be reduced by unicasting the notification.

Regarding claim 17, Xu discloses *substantially all of the designated receivers establish only a single unicast connection related to receiving the data file*.

Xu discloses the claimed invention except that all of the designated receivers establish only a single unicast connection related to receiving the data file.

Aoki teaches that in the global resending control step, as schematically shown in FIG. 2, a terminal C4, for example, other than the predetermined terminals within the same subnet SN1 transmits a resending request to a terminal T1 located outside of the subnet SN1. At this time, the terminal C4 establishes a connection in advance (e.g., though a router R) with the destination terminal T1 to which the resending request is transmitted. In response to a resending request 3, resending data 4 are transmitted from the destination terminal T1 by unicast.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Aoki, by establishing only a single unicast connection. The benefit is that through this connection the server could resend missing data.

Regarding claim 18, *all of the designated receivers establish up to two single unicast connections related to receiving the data file*.

Xu discloses the claimed invention except that *all of the designated receivers establish up to two single unicast connections*.

Aoki teaches the resending control step, as schematically shown in FIG. 2, the unicasting step may be executed with a connection established fixedly in advance.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Aoki, by establishing up to two single unicast connections related to receiving the data file, for the second unicast connection (backup) to reestablish the first connection in case of failure.

Regarding claim 19, Xu discloses *at least a portion of the data file is encrypted, requiring one or more decryption keys identified in the transmitted data file*. [0070], [0071], [0072] and [0073]: note, by first obtaining a signing key and a certificate containing the corresponding signature verification key from a Key Distribution Center (KDC) which creates the MAC keys and delivers them securely (with authentication and secrecy) to the authorized mobile stations, at least a portion of the data file is thus encrypted).

Regarding claim 20, Xu discloses *the receivers request the one or more keys after receiving the data file*, ([0068], [0069], [0070]).

Regarding claim 21, Xu discloses *at least one of the receivers requests the one or more keys,* (a different key is used for signing the messages and verifying the signatures [0070]), *after receiving the data file and at least one of the receivers is provided with one or more of the keys before the transmission,* (a Key Distribution Center (KDC) creates the MAC keys and delivers them securely (with authentication and secrecy) to the authorized mobile stations, so a different signing key can be provided for each authorized mobile station (source authentication) or the same signing key can be shared by all authorized mobile stations (group authentication) [0071]).

Regarding claim 22, Xu discloses *the receivers request the one or more keys after determining that they received sufficient data to allow reconstruction of the data file*, (a different signing key can be provided for each authorized mobile station (source authentication) or the same signing key can be shared by all authorized mobile stations (group authentication) [0071])

Regarding claim 23, Xu discloses *the keys* ([0069],the key can be shared either by all mobile stations authorized to access a particular multicast group (group authentication), or a different key can be assigned to each authorized mobile station (source authentication)), *are received on a single unicast connection along with any supplementary data required, not received during the multicast transmission*.
Xu discloses the claimed invention (the keys and the supplementary data reception) except that they are received on a single unicast connection.

Aoki teaches *a single unicast connection related to receiving the data file* (refer to discussion in claim 17).

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Aoki, by receiving keys on a single unicast connection along with any supplementary data required, the benefit is so as to deliver highly personalized data, such as stock portfolio updates and personalized newspapers.

Regarding claim 24, *receiving acknowledgements from receivers that received the notification or at least a portion of the data file, after transmitting the data file, wherein determining receivers designated that did not receive at least a portion of the data file is performed by determining receivers from which acknowledgments were not received*.

Although Xu discloses the claimed invention, Xu does not explicitly disclose *receiving acknowledgements from receivers that received the notification after transmitting the data file*

Amlekar discloses disclose *receiving acknowledgements from receivers that received the notification after transmitting the data file,* col. 4 lines 62-65. Fig. 1 step 104, the server receives a response from the clients over the control channel. If a file is not received in its entirety, (*a portion of the data file*), by one or more clients, the response may identify which parts of the file were not received by each client. If a client received the entire file, it may either not respond to the server or may indicate that the entire file was received, depending on the particular implementation of the method 100.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar so as to interpret the lack of acknowledgement indicates designated *receivers from which acknowledgments were not received*.

Regarding claim 25, *receiving the acknowledgements comprises receiving a request for decryption keys*.

Although Xu discloses the claimed invention, ([0074] when the mobile station replies to a multicast session notification, it signs the response and includes with it the certificate containing the signature verification key), Xu does not explicitly disclose *receiving acknowledgements comprises receiving a request for decryption keys*.

Amlekar disclose *receiving acknowledgements from receivers,* col. 4 lines 62-65.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar to *receive decryption keys* for purpose of authentication.

Regarding claim 26, *receiving the acknowledgements comprises receiving a request for supplementary data not received during the multicast transmission*.

Xu teaches the claimed invention but does not explicitly disclose *receiving acknowledgements comprises receiving a request for supplementary data not received during the multicast transmission*.

Amlekar disclose *receiving acknowledgements from receivers,* col. 4 lines 62-65, in addition to receiving supplemental data as indicated in step 110, fig.1: In step 110, the server then sends the minimum retransmission data set to the clients. The minimum retransmission data set may be sent to all the clients or only to the clients who indicated that they were missing data, col. 2 lines 50-54.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar to *receive part or portion of data that was not received. The benefit is that receiving only missing part enhances customers' satisfaction by saving valuable processing time*

Regarding claims 27, Xu discloses *receiving the acknowledgements comprises receiving over a different network than the network on which the data file was multicast*.

Xu teaches the claimed invention but does not explicitly disclose *receiving acknowledgements comprises receiving the acknowledgements comprises receiving over a different network than the network on which the data file was multicast*.

Amlekar disclose at step 324, fig. 3b, the client 206 detecting the end of the transmission by receiving an end-of-file (EOF) indicator from the server 204. The client 206 then closes the session on the data channel 214, and at step 326, communicates to

the server 204 over the control channel 212 the missing byte ranges not received in the data transmission of step 312. The communication from the client 206 to the server 204 over the control channel 212 may also include any ACKs or NAKs required by the multicast protocol, col. 4 lines 53-66.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar to receive *over a different network constituting backup network.*

Regarding claim 33, Xu discloses *attempting to deliver the data file to the determined receivers comprises delivering on a different network than the network on which the data file was multicast*, (fig. 1, RNC 112 each responsible for different domain, as can be seen one domain serves a determined receiver, the other delivering multicast data to receivers)

Regarding claim 34, Xu discloses *the notification indicates a plurality of categories to which the data file relates and the plurality of receivers comprises receivers designated to receive data belonging to different ones of the plurality of categories*, ([0034]: note, fig. 1, RNC 112 each responsible for different domain, as can be seen one domain serves a determined receiver, the other delivering multicast data to receivers)

Regarding claim 35, Xu discloses *transmitting the data file comprises transmitting a plurality of sub-files in a plurality of separate transmission sessions*, (fig. 2. multicast data transmission 218 includes comprises transmitting a plurality of sub-files in a plurality of separate transmission sessions: MBMS notification 213 and radio bearer assignment notification 216)

Regarding claim 36, Xu discloses *transmitting the data file comprises transmitting a plurality sub-files on a plurality of different channels*.

Xu teaches the claimed invention but does not explicitly *transmitting the data file comprises transmitting a plurality sub-files on a plurality of different channels.*

Amlekar discloses the server 204 and the clients 206 use a plurality of channels 212 and 214 for the purpose of transferring the data file, col. 3 lines 8-23.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar using a plurality of different channels so as to maintain at least a connection by avoiding repeated connection establishment and termination.

Regarding claim 58 Xu discloses *receiving from the at least one receivers provided with the decryption keys before transmitting the encrypted file, acknowledgement messages*,

Although Xu discloses the claimed invention Xu does not explicitly discloses receiving acknowledgement messages before transmitting the encrypted file.

Amlekar discloses disclose *receiving acknowledgements from receivers that received the notification,* col. 4 lines 62-65. Fig. 1 step 104.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar so as to send data to clients who accept the terms of the data transfer through acknowledgement messages for the purpose of charging.

Regarding claim 59, Xu discloses *the acknowledgement messages are received at least 10 minutes after the transmission of the encrypted file is completed*, (note, [0051]

discloses the moment for the response to the membership query is determined by setting a timer to a random value between zero and the maximum delay value. The idea here is to determine a member-specific response moment for each group member present in the cell. The response moment can be determined in many different ways. Instead of setting a timer to a random value, each mobile station can, for example, calculate its response moment by means of an algorithm having at least one input specific to each mobile station)

Although Xu discloses the claimed invention Xu does not explicitly discloses the acknowledgement messages.

Amlekar discloses disclose *receiving acknowledgements from receivers that received the notification,* col. 4 lines 62-65. Fig. 1 step 104.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar so that the *acknowledgement messages* calculation can be based on the International Mobile Subscriber Identity (IMSI) and the current frame number, for example. As the majority of the mobile stations cancel the sending of the report before the response moment arrives, uplink congestion can be avoided.

Regarding claim 62, *the at least one of the receivers provided with the decryption keys before transmitting the encrypted file are selected at least partially responsive to the number or percentage of acknowledgements provided by the receivers in a given period*,

Xu teaches the claimed invention, (transmitting the encrypted file responsive to the notification, fig. 3 step 308) but does not explicitly disclose the transmission responsive to the number or percentage of acknowledgements provided by the receivers in a given period.

Amlekar disclose transmitting acknowledgements from receivers, col. 4 lines 62-65, in addition to receiving supplemental data as indicated in step 110, fig.1: In step 110, the server then sends the minimum retransmission data set to the clients. The minimum retransmission data set may be sent to all the clients or only to the clients who indicated that they were missing data, col. 2 lines 50-54.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar to transmit data subsequent to the number or percentage of acknowledgements provided by the receivers in a given period, to differentiate receivers, or to assure QoS based on percentage of acknowledgements provided.

Regarding claim 66, Xu discloses *a method of transmitting multicast data, comprising:*

providing a data file for transmission, (fig. 2)*;*

estimating one or more transmission parameter values required to achieve, on the average, a reception rate which allows less than 100% of the receivers to which the multicast data is directed to reconstruct the data file from the multicast transmission, (the total number of flag-holders drop, note this value is below a predetermined number, [0063], giving the indication that the reception rate is less than 100% of the receivers);

transmitting the multicast data representing the data file on a multicast channel, using the one or more estimated parameter values, (multicast data transmission scheme (fig. 2)which utilizes service notifications sent to the members of the multicast group; note because the number of users in a cell changes constantly [0062], thus the transmission of the multicast data is dependent of the total number of flag-holders, [0063]: this value must drop below a predetermined number before a multicast group membership query is performed) *and*

providing at least supplementary portions of the data to receivers that were not able to reconstruct the data file in its entirety from the multicast data transmitted on the multicast channel.

Xu teaches the claimed invention but does not explicitly disclose providing supplementary portions of the data to receivers not received during the multicast transmission.

Amlekar disclose *receiving acknowledgements from receivers,* col. 4 lines 62-65, in addition to receiving supplemental data as indicated in step 110, fig.1: In step 110, the server then sends the minimum retransmission data set to the clients. The minimum retransmission data set may be sent to all the clients or only to the clients who indicated that they were missing data, col. 2 lines 50-54.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar to receive part or portion of data by the receivers that were not able to reconstruct the multicast data transmitted in its

entirety. The benefit is that receiving only supplemental portions could save reconnection and processing time.

Regarding claim 67, *providing at least supplementary portions comprises transmitting the supplementary portions over a unicast connection*,

Xu discloses the claimed invention (the keys and the supplementary data reception) except that they are received on a unicast connection.

Aoki teaches *a single unicast connection related to receiving the data file* (refer to discussion in claim 17).

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Aoki, by receiving keys on a unicast connection along with any supplementary data required, the benefit is so as to deliver highly personalized data, such as stock portfolio updates and personalized newspapers.

6. Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of Amlekar and further in view of Grube et al (US 5,361,402), hereinafter referred to as Grube.

Regarding claim 68, *the one or more transmission parameters comprise a transmission power level*.

Xu discloses the claimed invention, (transmission parameters [0042]), except explicitly that transmission parameters comprise a transmission power level.

Grube in the same field discloses device for use in a radio system to analyze various transmission parameters to analyzing transmission parameters of signals. One such transmission parameter is a so-called effective radiated power (ERP) of the channel under consideration (use of actual ERP is significant, since the power level of the communication channel may be varied from time to time to meet other requirements), col. 3 lines 18-32.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Grube, so that the transmitted power level is used to provide diagnostics for such a system.

Regarding claim 69, *the one or more transmission parameters comprise a FEC redundancy level*.

Xu teaches the claimed invention except explicitly *or more transmission parameters comprise a FEC redundancy level*.

Amlekar teaches methods 300 and 314 enable reliable data multicasting from a server to one or more clients, (in accordance with fig.3a). The methods 300 and 314 that may be used for the multicast transmission of a variety of data may also incorporate a forward error correction (FEC), col. 6 lines 3-5.

It would have been obvious to a person of ordinary skill at the time the invention was made to modify Xu with the teaching of Amlekar, to incorporate forward error correction (FEC), for (FEC) software may reduce the number of retransmissions by alleviating some portion of the data packet loss.

Regarding claim 70, Xu discloses *estimating the one or more transmission parameter*, (transmission parameters [0042]), *values comprises estimating based on general network data without relation to specific conditions of a current transmission*, ([0051]: the estimation is done calculate its response moment by means of an algorithm having at least one input specific to each mobile station)

Regarding claim 71, Xu discloses *estimating the one or more transmission parameter values comprises estimating based on specific conditions of a current transmission*. ([0051]: the estimation is done calculate its response moment by means of an algorithm having at least one input specific to each mobile station. Such a calculation can be based on the International Mobile Subscriber Identity (IMSI) and the current frame number, for example)

Regarding claim 72, Xu discloses *estimating the one or more transmission parameter values comprises estimating based on the number of receivers,* ([0051] In the above-described scheme the moment for the response to the membership query is determined by setting a timer to a random value between zero and the maximum delay value. The idea here is to determine a member-specific response moment for each group member present in the cell. The response moment can be determined in many different ways. Instead of setting a timer to a random value, each mobile station can, for example, calculate its response moment by means of an algorithm having at least one input specific to each mobile station. Such a calculation can be based on the International Mobile Subscriber Identity (IMSI) and the current frame number, for example. As the majority of the mobile stations cancel the sending of the report before the response

moment arrives, uplink congestion can be avoided).

Regarding claim 73, Xu discloses *the multicast channel comprises a data channel of a cellular network,* ([0060], [0061])

7. Claims 79 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of Shao et al. (US 7,093,028 B1).

Regarding claim 79, *a method of transmitting multicast data in a cellular network, comprising:*

providing data for multicast transmission, (see fig. 3 illustration of multicast data transmission) *to a plurality of base stations,* (fig. 1), *having different bandwidth amounts for multicast transmission, at a same rate;*

dropping data by one or more of the base stations, as required, so that the data can be transmitted by each of the base stations on its respective allocated bandwidth for multicast transmission; and

transmitting the non-dropped data such that the data is transmitted by all the base stations substantially synchronously.

Xu teaches the claimed invention except explicitly a plurality of base stations have different bandwidth amounts for multicast transmission, at a same rate;

dropping data by one or more of the base stations, as required, so that the data can be transmitted by each of the base stations on its respective allocated bandwidth for multicast transmission; and

transmitting the non-dropped data such that the data is transmitted by all the base stations substantially synchronously.

Shao teaches a scalable multicast video transmission scheme where the sender is adapted to a plurality of clients (fig. 1) requiring different bandwidth; in addition the transmission is done at the same rate, for the sender's rate is adapted to meet the requirements of the worst positioned client, col. 11 lines 15-23, such that some of the data packets maybe dropped by the network devices or otherwise lost during transmission, col. 10 lines 31-38. In addition, col. 11 lines 15-37: data (non-dropped data), is transmitted at the same rate

It would have been obvious to a person of ordinary skill at the time the invention was made to modify Xu with the teaching of Shao, to maintaining a predicted level of service reception by all clients. The benefit is that the sender's rate is adapted to meet the requirements of the worst positioned client.

Regarding claim 80, *the base stations use a small buffer, having room for at most five packets, for the provided multicast data*, (Xu discloses, [0041], the SGSN (fig.1 element 123) operatively connected the base stations 111. The SGSNs buffer the multicast data).

8. Claims 81, 82, 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of Shao and further in view of Amlekar.

Regarding claim 81, *providing the data*, (multicast data provided via the SGSNs), *comprises providing data protected with a forward error correction code*,

Xu teaches the claimed invention except explicitly the data provided does not comprise providing data protected with a forward error correction code.

Amlekar teaches methods 300 and 314 enable reliable data multicasting from a server to one or more clients, (in accordance with fig.3a). The methods 300 and 314 that may be used for the multicast transmission of a variety of data may also incorporate forward error correction (FEC), col. 6 lines 3-5.

It would have been obvious to a person of ordinary skill at the time the invention was made to modify Xu with the teaching of Amlekar, to incorporate forward error correction (FEC), for (FEC) software may reduce the number of retransmissions by alleviating some portion of the data packet loss.

Regarding claim 82, *transmitting supplementary data to receivers that request data they did not receive in the multicast transmission over point-to-point connections*,

Xu teaches the claimed invention except explicitly supplementary data to receivers that request data they did not receive in the multicast transmission over point-to-point connections

Amlekar disclose receiving supplemental data as indicated in step 110, fig.1: In step 110, the server then sends the minimum retransmission data set to the clients. The minimum retransmission data set, (*supplementary data*), may be sent to all the clients or only to the clients who indicated that they were missing data, col. 2 lines 50-54.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar to transmit the supplementary data *over point-to-point connections* (unicast) for it offers the benefits of interactivity between clients and server, easier setup, and multiple-bit-rate streaming capability.

Regarding claim 88, a data server, comprising:

an input interface for receiving files to be multicast, (multicast data is inputted to the radio network controller 112, from the SGSN 123 of the core network 120);

an output interface for providing signals for transmission to receivers, ([0034]: fig. 1, the mobile stations are connected via the Uu radio interface to node B elements 111, which are the physical units for radio transmission/reception in the cellular network; through this interface data is provided to the mobiles stations), *and*

a controller, ([0034]: fig. 1, the Radio Access Network further comprises Radio Network Controllers (RNC) 112, each of which is connected through the lub interface to a set of node B elements), *adapted to generate a notification on an upcoming multicast transmission,* (a multicast service notification is transmitted to mobile stations, thereby informing members of the multicast group of an upcoming multicast sessions), *responsive to a received file, to provide the notification through the output interface for transmission and to provide the received file for transmission,* ([0043]: each of the RNCs receiving the MBMS RAB assignment request then sends an MBMS notification to all cells controlled by the RNC (step 213), notifying the mobile stations of incoming multicast data), *without receiving acknowledgements from the receivers on whether*

they received the notification, to determine receivers designated to receive the multicast transmission that did not receive at least a portion of the data file and to attempt to deliver the data file to the determined receivers.

Although Xu discloses the claimed invention, Xu does not explicitly disclose of:

data server, and

providing the received file for transmission without receiving acknowledgements from the receivers on whether they received the notification, to determine receivers designated to receive the multicast transmission that did not receive at least a portion of the data file and to attempt to deliver the data file to the determined receivers

Referring to fig. 1, Amlekar teaches a method 100 enables a computer (e.g., a server) to efficiently provide identical information to a plurality of other computers (e.g., clients), the method and system for reliably multicasting a data transmission from a server to one or more clients

providing the received file for transmission without the data server receiving acknowledgements from the receivers on whether they received the notification, (col. 2 line 37: a client may choose not to acknowledge, in that case the data server will not receive acknowledgements of the received information);

to determine receivers designated to receive the multicast transmission that did not receive at least a portion of the data file, (note fig. 1 steps 106-110 indicate that data set may be sent to all the clients or only to the clients who indicated that they were missing data, col. 2 lines 51-54) *; and*

to attempt to deliver the data file to the determined receivers, (col. 2 lines 51-56). It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Amlekar so as to inform the clients (MS) of upcoming multicast session, for multicasting makes possible to the server to send out a single packet intended to all clients who have requested the information.

Claims 89 and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu, in view of Cai et al. (US 2005/0030966 A1), hereinafter referred to as Cai.

Regarding claim 89, Xu describes *a mobile station*, (fig.1 MS) *comprising*:

a receiver, (note the mobile station is adapted to receive communication. The mobile stations are connected via the Uu radio interface to node B elements 111, which are the physical units for radio transmission/reception in the cellular network. Depending on the sectoring of its antennas, a node B can serve one or more cells, [0034]), *and*

a processor adapted to tune the receiver to receive data on a plurality of multicast channels and to combine the data received on the plurality of channels into a single multimedia file, ([0050] During the service session, the MBMS notification and the radio bearer assignment notification are preferably transmitted periodically in order for mobile stations which enter the cell to detect the on-going session on the uplink signaling channels ([0026]). The two messages can be transmitted successively as separate messages, or they can be combined into a single message).

Xu teaches the claimed invention except explicitly a processor adapted to tune the receiver to receive data on a plurality of multicast.

Cai teaches a mobile station capable of accessing Multimedia Broadcast Multicast Service (MBMS) service. Fig. 2 processor 206, the mobile station includes a processor that receives a first set of MBMS data and an associated first Session Description, stores the first Session Description to produce a stored first Session Description, receive a second Session Description associated with a re-conveyance of the first set of data, and determines whether to receives the re-conveyance based on the first Session Description and the second Session Description, [0023], [0029].

It would have been obvious to a person of ordinary skill at the time the invention was made to modify Xu with the teaching of Cai, to tune the antennas of the MS receiver so as to receive data *on the plurality of channels, for a single multimedia file; this assures* QoS for maintaining an expected level of service reception to the clients.

Regarding claim 90, Xu discloses *the data received on the plurality of channels comprises different multimedia types on different channels*, (Note the Multimedia (MM) and/or the Multimedia Broadcast/Multicast Service (MBMS) service provided, fig. 1, [0054]. Also, the MBMS has two modes of operation: a broadcast mode and a multicast mode. When using MBMS, data is transmitted over a common radio channel in order to efficiently use radio/network resources. In the broadcast mode the data is transmitted to all users in one or more broadcast areas, whereas in the multicast mode the data is transmitted to a multicast group in a multicast area. The multicast group is a group of users who have activated the service in the multicast mode and are therefore capable of

receiving the data)

Regarding claim 91, *determining the receivers that did not receive at least a portion of the data file comprises determining receivers that did not receive the data file at all*.

Xu teaches the claimed invention except explicitly determining the receivers that did not receive at least a portion of the data file comprises determining receivers that did not receive the data file at all.

Amlekar teaches determining the receivers that did not receive at least a portion. This is done in fig. 1 step 106, col. 2 lines 42-56. Note this determination is made whether the receivers that did not receive at least a portion or the entirety of the data file by sending a minimum retransmission data set to clients. That is whether a client receives a portion of the data or nothing at all; it will be sent a minimum retransmission data set.

It would have been obvious to a person of ordinary skill at the time the invention was made to modify Xu with the teaching of Amlekar. Retransmission assures QoS for maintaining an expected level of service provided to the clients.

Regarding claim 92, *transmitting a data file on the one or more multicast channels comprises transmitting the file data a plurality of times*, ([0048] In order to enable the mobile stations entering a cell to detect the upcoming multicast session, MBMS notification is preferably sent periodically until the maximum response time has expired. In the repeated MBMS notification, the value of the maximum response time is updated (i.e. decreased) accordingly).

Regarding claim 93, *transmitting the data file comprises transmitting the file protected with a forward error correction code*.

Xu teaches the claimed invention except explicitly transmitting the file protected with a forward error correction code.

Amlekar teaches multicast data transmission that incorporates forward error correction (FEC) software which may reduce the number of retransmissions by alleviating some portion of the data packet loss. FEC software may be used with the original transmission and/or may be used with subsequent retransmissions, col. 6 lines 3-8.

It would have been obvious to a person of ordinary skill at the time the invention was made to modify Xu with the teaching of Amlekar, in order to reduce the number of retransmissions.

Claims 94 and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu, in view of Amlekar, in view of Aoki and further in view of Liljestrand et al. (US 6,853,714 B2), hereinafter referred to as Liljestrand.

Regarding claim 94, *providing the notification message comprises sending a message to a mail-box of the mobile station*.

Xu teaches the claimed invention except explicitly *sending a message to a mail-box of the mobile station*.

Liljestrand teaches providing a unified messaging service so that voice mail, e-mail, fax and message delivery features to a subscriber mailbox, col. 19, table 3.It would have been obvious to a person of ordinary skill at the time the invention was made to modify

Xu with the teaching of Liljestrand to allow integration of mailbox system so users can retrieve messages from their MS.

Regarding claim 95, the notification message comprises providing in an SMS message.

Xu teaches the claimed invention except explicitly

Liljestrand teaches providing a unified messaging service so that voice mail, e-mail, fax and message delivery features to a subscriber mailbox, col. 19, table 3. Finally, the message delivery feature provides Short Message Service (SMS), pager, voice and message forwarding services.

It would have been obvious to a person of ordinary skill at the time the invention was made to modify Xu with the teaching of Liljestrand to allow integration of SMS message allowing the interchange of short text messages between MSs.

Regarding claim 96, *at least 80% of the designated receivers establish only a single unicast connection related to receiving the data file and transmit only a single request for data.*

Xu discloses the claimed invention but explicitly that *at least 80% of the designated receivers establish only a single unicast connection related to receiving the data file.*

Aoki teaches that the data transmission is performed one to one in the unicast. Namely, as shown in FIG. 17, a server S1 which is on a transmitting side transmits data with a proper address "192.168.100.201" of a terminal C1 as a destination address. Then the data will be transmitted to the terminal C1 which is the destination. Similarly C2, C2 and C4 in the receiving side will establish also the single unicast connection with server S1.

It would have been obvious to a person of ordinary skill at the time the invention was made to implement Xu with the teaching of Aoki, so that the load of the network can be reduced by unicasting the notification.

Regarding claim 97, *the receivers transmit uplink transmissions regarding the multicast transmission only after they collected from the multicast channel all the data from the multicast channel used in reconstruction the multicast transmission*. (fig. 3 step 308: sending presence report (that is transmitting uplink transmissions regarding the multicast transmission: the receivers are responsive to the notification) [0060]).

Regarding claim 98, Xu discloses that *at least one of the receivers requests the one or more keys from an entity belonging to a different mobile network*, ([0073]: the mobile station first obtains a signing key and a certificate containing the corresponding signature verification key from a KDC. The KDC can be a network element internal (cf. FIG. 1) or external to the UMTS system. For example, an external KDC could be located at the content provider sending the multicast service data via the Internet, while an internal KDC could be co-located with the BM-SC).

Regarding claim 99, *providing the data comprises providing data encoded according to a FEC code*.

Xu teaches the claimed invention except explicitly the data provided does not comprise providing data encoded with a forward error correction code.

Amlekar teaches methods 300 and 314 enable reliable data multicasting from a server to one or more clients, (in accordance with fig.3a). The methods 300 and 314 that may

be used for the multicast transmission of a variety of data may also incorporate forward error correction (FEC), col. 6 lines 3-5.

It would have been obvious to a person of ordinary skill at the time the invention was made to modify Xu with the teaching of Amlekar, to incorporate forward error correction (FEC), for (FEC) software may reduce the number of retransmissions by alleviating some portion of the data packet loss.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMMANUEL MAGLO whose telephone number is (571)270-1854. The examiner can normally be reached on Monday - Thursday 7:00 - 4:30 and every other Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571)272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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